PF 30-APR-2001; 2001WO-DK000293.
XX
PR 28-APR-2000; 2000DK-00000707.
PR 10-MAY-2000; 2000US-0203345P.
PR 28-FEB-2001; 2001DK-00000327.
PR 21-MAR-2001; 2001US-0277817P.
XX
PA (NOVO) NOVOZYMES AS.
XX
PI Roggen EL, Ernst S, Svendsen A, Friis EP, Von Der Osten C;
XX
DR WPI; 2001-626552/72.
XX
PT Selecting protein variants having modified immunogenicity, used to
PT produce vaccines, detergents and personal care compositions, involves
PT localizing epitope sequences on the three-dimensional structure of a
PT protein.
XX
PS Claim 99; Page 510-512; 513pp; English.
XX
CC The invention relates to selecting a protein variant having modified
CC immunogenicity, compared to a parent protein, comprising using the
CC antibody binding sequence to localise epitope sequences on the three
CC dimensional structure of the parent protein and defining an epitope area
CC including amino acids within 5 Angstrom of the epitope amino acids. The
CC method is useful for identifying structural epitopes on the 3-dimensional
CC surface of commercial and environmental allergens. Compositions
CC containing the protein variants are used as vaccines, detergents and
CC personal care compositions, e.g. shampoo, balsam, hair conditioners, hair
CC waving compositions, hair dyeing compositions, hair tonic, hair liquid,
CC hair cream, hair rinse, hair spray, chewing gum, skin cream, sunscreen,
CC shaving foam, cream soap, skin milk or foundation. The present sequence
CC is that of a polypeptide of the invention
XX
SQ Sequence 471 AA;

Query Match 92.7%; Score 1440; DB 4; Length 471;
Best Local Similarity 100.0%; Pred. No. 1.2e-133;
Matches 271; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy         25 ATLDSWLSNEATVARTAILNNIGADGAWVSGADSGIVVASPSTDNPDYFYTWTRDSGLVL 84
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 ATLDSWLSNEATVARTAILNNIGADGAWVSGADSGIVVASPSTDNPDYFYTWTRDSGLVL 60

Qy         85 KTLVDLFRNGDTSLLSTIENYISAQAIVQGISNPSGDLSSGAGLGEPKFNVDETAYTGSW 144
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 KTLVDLFRNGDTSLLSTIENYISAQAIVQGISNPSGDLSSGAGLGEPKFNVDETAYTGSW 120

Qy        145 GRPQRDGPALRATAMIGFGQWLLDNGYTSTATDIVWPLVRNDLSYVAQYWNQTGYDLWEE 204
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 GRPQRDGPALRATAMIGFGQWLLDNGYTSTATDIVWPLVRNDLSYVAQYWNQTGYDLWEE 180

Qy        205 VNGSSFFTIAVQHRALVEGSAFATAVGSSCSWCDSQAPEILCYLQSFWTGSFILANFDSS 264
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 VNGSSFFTIAVQHRALVEGSAFATAVGSSCSWCDSQAPEILCYLQSFWTGSFILANFDSS 240

Qy        265 RSGKDANTLLGSIHTFDPEAACDDSTFQPCS 295
               |||||||||||||||||||||||||||||
Db        241 RSGKDANTLLGSIHTFDPEAACDDSTFQPCS 271
```

RESULT 12
AAW55979
ID AAW55979 standard; protein; 616 AA.
XX
AC AAW55979;
XX
DT 27-JUL-1998 (first entry)
XX
DE Aspergillus awamori glucoamylase mutant S411A.
XX
KW Aspergillus awamori; glucoamylase; Aspergillus sp; mutant; fungal; food;
KW fructose; corn; sweetener; 1,4-alpha-D-glucan glucohydrolase;
KW genetic engineering.
XX
OS Synthetic.
OS Aspergillus awamori.
XX
PN WO9803639-A1.
XX
PD 29-JAN-1998.
XX
PF 24-JUL-1997; 97WO-US012983.
XX
PR 24-JUL-1996; 96US-0022578P.
PR 02-AUG-1996; 96US-0023077P.
XX
PA (IOWA) UNIV IOWA STATE RES FOUND INC.
XX
PI Allen M, Fang T, Li Y, Liu H, Chen H, Coutinho P, Honzatko R;
PI Ford C;
XX
DR WPI; 1998-120764/11.
XX
PT Genetically engineered fungal glucoamylase - useful in, e.g. food
PT industry for production of high fructose corn sweeteners.
XX
PS Claim 10; Page; 97pp; English.
XX
CC The present sequence represents a specifically claimed mutant
CC glucoamylase from Aspergillus awamori (1,4-alpha-D-glucan
CC glucohydrolase). The present invention describes fungal glucoamylases
CC (FG) comprising: a mutation pair Asn20Cys coupled with Ala27Cys forming a
CC disulphide bond between the 2 members of the pair; and a 311-314Loop or
CC Ser411Ala mutation. FG can be used in industry for the production of high
CC fructose corn sweeteners, while the glucose produced by glucoamylase can
CC be crystallised or used in fermentation to produce organic products, e.g.
CC citric acid, ascorbic acid, lysine, glutamic acid or ethanol for
CC beverages and fuel. The mutations provide increased thermal stability,
CC reduced isomaltose formation and increased pH optimum. N.B. The present
CC sequence is not given in the specification but is derived form SEQ ID
CC NO:1 as stated in the claim
XX
SQ Sequence 616 AA;

Query Match 92.7%; Score 1440; DB 2; Length 616;
Best Local Similarity 100.0%; Pred. No. 1.8e-133;
Matches 271; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

```
Qy         25 ATLDSWLSNEATVARTAILNNIGADGAWVSGADSGIVVASPSTDNPDYFYTWTRDSGLVL 84
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 ATLDSWLSNEATVARTAILNNIGADGAWVSGADSGIVVASPSTDNPDYFYTWTRDSGLVL 60

Qy         85 KTLVDLFRNGDTSLLSTIENYISAQAIVQGISNPSGDLSSGAGLGEPKFNVDETAYTGSW 144
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 KTLVDLFRNGDTSLLSTIENYISAQAIVQGISNPSGDLSSGAGLGEPKFNVDETAYTGSW 120

Qy        145 GRPQRDGPALRATAMIGFGQWLLDNGYTSTATDIVWPLVRNDLSYVAQYWNQTGYDLWEE 204
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 GRPQRDGPALRATAMIGFGQWLLDNGYTSTATDIVWPLVRNDLSYVAQYWNQTGYDLWEE 180

Qy        205 VNGSSFFTIAVQHRALVEGSAFATAVGSSCSWCDSQAPEILCYLQSFWTGSFILANFDSS 264
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 VNGSSFFTIAVQHRALVEGSAFATAVGSSCSWCDSQAPEILCYLQSFWTGSFILANFDSS 240

Qy        265 RSGKDANTLLGSIHTFDPEAACDDSTFQPCS 295
               |||||||||||||||||||||||||||||
Db        241 RSGKDANTLLGSIHTFDPEAACDDSTFQPCS 271
```

RESULT 13
AAB15176
ID AAB15176 standard; protein; 616 AA.
XX
AC AAB15176;
XX